ELSEVIER

Agricultural Water Management 40 (1999) 405–407

Agricultural water management

# Contents of *Agricultural Water Management*, Volume 40

**VOL. 40 NO. 1** **MARCH 1999**

**Introduction** . . . . . 1

Systems approaches to water management research
W. Stephens and T. Hess (Silsoe, UK) . . . . . 3
Water losses in smallholder irrigation schemes
R. Carter, M. Kay and K. Weatherhead (Silsoe, UK) . . . . . 15
Priorities for irrigated agriculture
A.W. Hall (Oxon, UK) . . . . . 25
Sustaining rice–wheat system productivity in the Indo-Gangetic plains: water management-related issues
I.P. Abrol (New Delhi, India) . . . . . 31
Opportunities and constraints to improving irrigation water management: Foci for research
M.A. Burton, D. Kivumbi and K. El-Askari (Southampton, UK) . . . . . 37
The IWMI water resources paradigm – definitions and implications
C.J. Perry (Colombo, Sri Lanka) . . . . . 45
Application of belief networks to water management studies
C. Batchelor and J. Cain (Wallingford, UK) . . . . . 51
Developing procedures for the sustainable use of mangrove systems
T. Franks and R. Falconer (Bradford, UK) . . . . . 59
Computer optimisation for better water allocation
R. Wardlaw (Edinburgh, UK) . . . . . 65
Productive efficiency and allocative efficiency: why better water management may not solve the problem
T. Allan (London, UK) . . . . . 71
Economic instruments for improving water use efficiency: theory and practice
R.J. Grimble (Kent, UK) . . . . . 77
Water users organisations
D. Stacey (Surrey, UK) . . . . . 83
Irrigated agriculture – adding value through technology and management reform
P.S. Lee (Croydon, UK) . . . . . 89
Limitations of water-control technology
J. Gowing (Newcastle upon Tyne, UK) . . . . . 95
The failure of adjustable irrigation technology, the options for change and the consequences for research
L. Horst (Wageningen, The Netherlands) . . . . . 101

Use of low-pressure pipe systems for greater efficiency
I.K. Smout (Leics, UK) . . . . . 107
Groundwater aspects: losses are inevitable but re-use is possible?
K.R. Rushton (Bedford, UK) . . . . . 111
Increasing water-use efficiency in rice production: farm-level perspectives
T.P. Tuong and S.I. Bhuiyan (Manila, Philippines) . . . . . 117
Causes of high water losses from irrigated rice fields: field measurements and results from analogue and digital models
S.H. Walker (Kent, UK) . . . . . 123
Regional salt- and water-balance modelling for sustainable irrigated agriculture
B.R. Sharma (New Delhi, India) . . . . . 129
More from less – better water management: issues and future policy
S.H. Walker (Kent, UK) . . . . . 135
Annex 1: Water-use efficiency on irrigation systems: a review of research carried out under DFID's engineering research programme
D. Brown (West Sussex, UK) . . . . . 139

**VOL. 40 NOS. 2–3** **MAY 1999**

**Introduction** . . . . . 151

Higher performance through combined improvements in irrigation methods and scheduling: a discussion
L.S. Pereira (Lisboa, Portugal) . . . . . 153
Irrigated agriculture in the Guadiana River high basin (Castilla-La Mancha, Spain): environmental and socioeconomic impacts
G.L. Sanz (Albacete, Spain) . . . . . 171
Irrigation with saline water: benefits and environmental impact
J.M. Beltrán (Rome, Italy) . . . . . 183
Improvement of irrigation management towards the sustainable use of groundwater in Castilla-La Mancha, Spain
F. Martín de Santa Olalla Mañas, A. Brasa Ramos, C. Fabeiro Cortés, D. Fernández González and H. López Córcoles (Albacete, Spain) . . . . . 195
GIS tools applied to the sustainable management of water resources. Application to the aquifer system 08-29
A. Calera Belmonte, J. Medrano González, A. Vela Mayorga and S. Castaño Fernández (Albacete, Spain) . . . . . 207
Regional analysis of irrigation water requirements using kriging. Application to potato crop (*Solanum tuberosum* L.) at Trás-os-Montes
V. Sousa (Vila Real, Portugal) and L.S. Pereira (Lisboa Codex, Portugal) . . . . . 221
The impact of agriculture on ground water quality in Slovenia: standards and strategy
B. Maticic (Ljubljana, Slovenia) . . . . . 235
Improving water use efficiency as part of integrated catchment management
C. Batchelor (Wallingford, UK) . . . . . 249
Blue node concept: a regional water management strategy
M.J. van der Vlist (Wageningen, The Netherlands) . . . . . 265
Efficient use of water in the southern region of Portugal: agronomic aspects
M. Carvalho and G. Basch (Évora, Portugal) . . . . . 275
Sustainable and effective irrigation through a new subsoil irrigation system (SIS)
H.K. Barth (Paderborn, Germany) . . . . . 283
Regional application of one-dimensional water flow models for irrigation management
G. D'Urso (Portici, Italy), M. Menenti (Wageningen, The Netherlands) and A. Santini (Portici, Italy) . . . . . 291

Management of water consumption in agriculture
A model for the economic
optimisation of water use: application to a sub-humid area
J.A. de Juan, J.M. Tarjuelo, J.F. Ortega, M. Valiente and P. Carrión
(Albacete, Spain) . . . . . 303
Analysis of uniformity of sprinkle irrigation in a semi-arid area
J.M. Tarjuelo, J. Montero, F.T. Honrubia, J.J. Ortiz and J.F. Ortega
(Albacete, Spain) . . . . . 315
Transfer of irrigation scheduling technology in Mexico
P.H. Quiñones (Monpellier, France), H. Unland, W. Ojeda and E. Sifuentes
(Mor, Mexico) . . . . . 333
Comparative analysis of main on-farm irrigation systems in Portugal
P.L. de Sousa (Lisbon, Portugal), L.L. Silva and R.P. Serralheiro (Évora, Portugal) 341
Assessment of the performance of border and furrow irrigation systems and the
relationship between performance indicators and system variables
J. Feyen and D. Zerihun (Leuven, Belgium) . . . . . 353
Assessment of vine development according to available water resources by using
remote sensing in La Mancha, Spain
F.J. Montero (Albacete, Spain), J. Meliá (Valencia, Spain), A. Brasa
(Albacete, Spain), D. Segarra (Valencia, Spain), A. Cuesta (Albacete, Spain) and
S. Lanjeri (Valencia, Spain) . . . . . 363
Optimal irrigation efficiency for maximum plant productivity and minimum water loss
S. Burke, M. Mulligan and J.B. Thornes (London, UK) . . . . . 377
Modelling the local climate in island environments: water balance applications
E. Brito de Azevedo (Azores, Portugal), L. Santos Pereira (Lisbon, Portugal) and
B. Itier (Paris, France) . . . . . 393

**Contents of *Agricultural Water Management*, Volume 40** . . . . . 405